

**IN THE SPECIFICATION**

Please amend the paragraph beginning at page 4, line 1, as follows:

The panoramic object is sufficiently wide to such an extent as not to be suitable for displaying as an image of one display frame of the image display means, or it can be displayed as the image of one display frame to some extent but it is equal to the range of a visual angle over which each part of the display needs to be seen in detail, and the field angle is 360 degree or less, and the images to be displayed need not always be continuous. There are two schemes for the image capturing device to obtain the video signal of a changed part of the panoramic object from the remote image sensing device. According to the one scheme: variation information on the image of the current surrounding video signal (hereinafter referred to as the current image) with respect to the ~~image~~ image of the previous surrounding video signal (hereinafter referred to as the previous image) received from the camera-equipped portable terminal is detected by variation detecting means from the received surrounding video signal; a capturing signal for obtaining a video signal of a part of the panoramic object is generated by capturing signal generating means based on the detected variation information; the generated capturing signal is sent to the remote image sensing device; and the video signal received by the remote image sensing device is sent by image relay means to the image display means. With this scheme, the image capturing device sends the capturing signal to the remote image sensing device and receives the video signal of the changed part of the panoramic object from the remote image sensing device to thereby obtain an image of the video signal of the changed part of the panoramic object.

Please amend the paragraph beginning at page 6, line 12, as follows:

Fig. 13 is a block diagram showing ~~[[an]]~~ a modified form of the remote image capturing device ~~[[1]]~~ 2 in Fig. 11.

Please amend the paragraph beginning at page 7, line 9, as follows:

This example uses an omnidirectional camera as a remote image sensing device 2. The omnidirectional camera is a digital video camera, which is an omnidirectional image sensor capable of image sensing of objects 360-degree surroundings; refer to, for example, Kazumasa Yamazaki, "Principle and Characteristics of Omnidirectional camera with a mirror," Computer Vision and Image Media, 125-21, P. 155~160, January 19, 2001. The omnidirectional camera is commercially available; by which images of a 360-degree panoramic object, with a predetermined reference direction at zero degree as shown in Fig. 2, for instance, are formed on a rectangular two-dimensional image sensor device 7, such as CCD (Charge Coupled Device), from which photoelectric conversion signals corresponding to respective pixels can be extracted.

Please amend the paragraph beginning at page 8, line 20, as follows:

A user holds the camera-equipped portable terminal 3 in his hand and takes pictures of a surrounding object 8 by a camera (portable image sensing means) 33 of the terminal 3; as he sees the partial object 61 in the panoramic object 6 displayed on the display surface 32a, if he wants to see another partial object in the panoramic object ~~[[61]]~~ 6 that he wishes to display at a remote place, then the user operates the camera-equipped portable terminal 3 to direct its camera 33 to take pictures of the partial object desired to see. For example, in the case of taking pictures of a partial object 62 in a direction 45 degree away to the right from the partial object 62, the direction 33a of the camera 33 of the camera-equipped portable terminal 3 is turned 45 degrees to the right as indicated by the one-dot chain line in Fig. 1.

Please amend the paragraph beginning at page 9, line 11, as follows:

The range over which the camera-equipped portable terminal 3 is shooting the surrounding object 8 is a shooting range 8b shifted to right from that 8a as shown in Fig. 3A. Accordingly, the received surrounding video signal at the time of seeing the reproduced image of the partial object 61 is the video signal of the shooting range 8a shown at the upper side of Fig. 3B, but the received surrounding video signal with the shooting direction of the camera-equipped portable terminal 3 turned 45 degrees to right is the video signal of the shooting range 8b shown at the lower side of Fig. 3B. Comparison of the both received surrounding video signals indicates that the same image part ~~shifts~~ shifts from right to left in the drawing, from which it is possible to detect that the shooting direction of the camera-equipped portable terminal 3 has been turned to right.

Please amend the paragraph beginning at page 12, line 16, as follows:

The image extracting means 24 of the remote image sensing device 2 extracts from the omnidirectional camera 21 a captured video signal of one frame that is determined by the received capturing signal. For example, based on the capturing signal, the image capturing means extracts a sequence of signals corresponding to pixels  $(x + a_p i, y + a_p j)$  (where  $i = 0, \pm 1, \dots, \pm I$ ,  $J = 0, \pm 1, \dots, \pm J$ ,  $2I$  being the number of x-direction pixels corresponding to one frame and  $2J$  the number  $[[\lambda]]$  of y-direction pixels corresponding to one frame) about a pixel position  $(x_1, y_1)$  in the image sensor device shown in Fig. 2, and the thus extracted signal is output as a captured video signal of the area 71. That is, in this example the center position of the partial object desired to extract and the zoom amount are specified by the capturing signal. In this example the capturing signal is composed of reference pixel position signals  $x$ ,  $y$  and a zoom in/out signal  $a_p$ .

Please amend the paragraph beginning at page 13, line 7, as follows:

The variation detecting means 12 of the image capturing device 1 detects, from the received surrounding video signal, information about a variation between the image of the current video signal (which image will hereinafter be referred to as the current image) and the image of the previous video signal received from the camera-equipped portable terminal 3. For example, as depicted in Fig. 5, the received surrounding video signal is stored in a receiving buffer memory 12a, before which the surrounding video signal previously received and stored in the receiving buffer memory 12a is stored in a previous frame memory 12b. The surrounding video signals stored in the memories 12a and 12b are both input to a variation detecting part 12c. The variation detecting part 12c detects the direction of movement from the previous image to the current one or the degree of movement (distance) or/and a change in the size of the object of the current image with respect to the previous image, i.e., the zoom amount, are detected. The variation information can be detected, for example, by techniques for analyzing the camera operation during shooting, that is, what is called camera work. The camera work analysis technique is disclosed, for example, in Yukinobu TANIGUCHI, et al., "PanoramExcerpts: Video Cataloging by Automatic Synthesis and Layout of Panoramic Images," IECEJ Journal D-II, Vol. J82-D-II No. 3, PP. 390-398 392, March 1999 and a book supervised by Kenji KOGURE, written by Kazuhiko YAMAMORI, "Future Network Technology Series, Media Processing Techniques 4," 20, Denki-Tsuushin Kyoukai, First Edition, November 10, 1999.

Please amend the paragraph beginning at page 15, line 27, as follows:

In general, updating of the capturing signals to be sent to the remote image sensing device [[11]] 2 upon each reception of one frame is not preferable since it increases the amount of processing, and even if updating is carried out for each frame, the user hardly perceives a change in the received partial-object image. Accordingly, the capturing signals

may be sent to the remote image sensing device  $[[11]]$  2 at appropriate time intervals. This time interval may be determined properly based on the usage pattern of the system: for example, every 1/10 sec when conditions of the object change relatively rapidly as in the case of traffic monitoring; when the object is scenery, every 1/3 sec, for instance, and in some cases, every several seconds. To this end, an update instructing part 12d is provided, for example, in the variation detecting means 12, and the receiving buffer memory 12a responds to an instruction from the update instructing part 12d to capture the surrounding video signal of one frame at preset update time intervals, and the variation detecting part 12c detects variation information at the update time intervals. Alternatively, the contents of the receiving buffer memory 12a are updated for each frame of surrounding video signals and, upon each detection of variation information, the contents of the receiving buffer memory 12a are transferred to the previous frame memory 12b. When all pieces of variation information detected in the variation information detecting part 12c are zero, that is, when  $d_x = d_y = 0$  and  $a = 1$  in this example, it is not necessary to generate and send the capturing signals to the remote image sensing device, in which the capturing signals need not be generated, either. The capturing signals may selectively be generated and transmitted in correspondence only to those pieces of the variation information which have undergone changes.

Please amend the paragraph beginning at page 17, line 18, as follows:

The captured video signal extracted from the omnidirectional camera 2 is sent from the image sending means 22 to the camera-equipped portable terminal 3 via the image capturing device 1. Accordingly, the image to be displayed on the image display means 32 of the camera-equipped portable terminal 3 also changes. That is, the desired partial object in the panoramic object changes in accordance with the camera work (direction and/or zoom

operation) of the camera-equipped portable terminal 3, and the captured video signal of the changing partial object is reproduced and displayed on the image display means [[22]] 32.

Please amend the paragraph beginning at page 21, line 16, as follows:

Upon receiving the end command in step S13, the image capturing device 1 may send the end command to the remote image sensing device [[1]] 2 as required (S14) to cause the remote image sensing device 1 to end transmission of the captured signal of the partial object immediately upon receiving the end command. Another possible method is to end the transmission of the captured signal a certain time elapsed after the first sending of the captured signal of the partial object. The surrounding video signal may also be received in the interval between the reception of the starting access and the reception of the operation command as indicated by the broken line in Fig. 7. While in the above the variation detecting timing is checked in step S7 to thereby perform the variation detection processing, for example, at a preset time intervals, it is also possible to omit step S7 and perform the variation detection processing at all times. As indicated by the broken lines in Fig. 7, the variation detection processing may be followed by determining whether the currently received surrounding image differs from the previously received surrounding image, and if no change is found, the procedure goes to step S4, whereas if a change is found, the procedure goes to step S9 (S15).

Please amend the paragraph beginning at page 22, line 7, as follows:

In Embodiment 1 the omnidirectional camera is used as the image sensing means of the remote image sensing device [[1]] 2 and the image capturing device 1 sends the capturing signal to the remote image sensing device to cause it to extract the partial-object captured signal, but in Embodiment 2 an omnidirectional camera is used as image sensing means of

the remote image sensing device 2, and the remote image sensing device 2 is caused to send all captured video signals to the image capturing device 1, and the image capturing device 1 extracts the partial-object captured signal from the received captured video signals.

Please amend the paragraph beginning at page 23, line 26, as follows:

Fig. 9 shows an example of the procedure of the image capturing device 1 in Embodiment 2. As is the case with the procedure depicted in Fig. 7, steps S1, S2 and S3 are performed. If no command for camera operation is received in step S3, the captured video signal is received from the remote image sensing device 2 in step [[S4]] S4', then in step S16 a partial-object captured signal is extracted from the received captured video signal based on the variation information stored in the previous signal memory 13a, and in step S17 the thus extracted partial-object captured signal is sent to the camera-equipped portable terminal 3.

Please amend the paragraph beginning at page 27, line 5, as follows:

For example, if the parameters stored in the storage part 24a are  $a_p$  and  $y$ , signals of pixels  $((a_{PM}/a_p)i, y+(a_{PM}/a_p)j)$  ( $i=0, \pm 1, \dots, \pm I, j=0, \pm 1, \dots, \pm J$ ) ( $i=0, \pm 1, \dots, \pm I, j=0, \pm 1, \dots, \pm J$ ) captured as a partial-object captured signal from an area 71 of a breadth  $2(a_{PM}/a_p)I$  and a length  $2(a_{PM}/a_p)J$  with its center at a position  $y$  on a bisector (center line) of the device 7 in the x-direction in Fig. 12, and when the parameters are updated with  $a_p$  and  $y'$ , signals of pixels  $((a_{PM}/a_p')i, y'+(a_{PM}/a_p')j)$  are captured as a partial-object captured signal from an area 72 of a breadth  $2(a_{PM}/a_p')I$  and a length  $2(a_{PM}/a_p')J$  with its center at a position  $y'$  on the center line.

Please amend the paragraph beginning at page 28, line 18, as follows:

The capturing signal generating means ~~[[14]]~~ 13 somewhat differs in construction and processing (operation) from the counterpart in Fig. 4. In Fig. 14 there is shown an example of its functional configuration. In this example the variation detecting means 12 is shown to detect, as the variation information, the direction information  $d_x$ ,  $d_y$  and the zoom information  $a$  by such configuration and method as referred to previously with reference to Fig. 5. In the previous signal memory 13a, the previous camera identification information ID<sub>p</sub>, the y-direction position  $y$  and the zoom amount  $a_p$  are stored. As their initial values, predetermined camera identification information ID<sub>1</sub> is set for the identification information ID<sub>p</sub>,  $y = 0$ , and the zoom amount  $a_p$  is set at an intermediate value between its maximum and minimum values.

Please amend the paragraph beginning at page 29, line 2, as follows:

The information  $d_x$  is input to a camera identifying part 13b. The processing in the camera identifying part 13b will be described below with reference to Fig. 15. If the sign of  $d_x$  is positive (~~S1~~) (S21), the angle  $\Delta x_{+1}$  between the camera shooting direction in the previous camera identification information ID<sub>p</sub> and the camera shooting direction in the current camera identification information ID<sub>p+1</sub> is read out of the camera direction storage means 19 using ID<sub>p</sub>·ID<sub>p+1</sub> as an address (~~S2~~) (S22). A check is made to determine whether  $d_x$  is equal to or greater than  $\Delta x_{+1}$  (~~S3~~) (S23), and if it is equal to or greater than  $\Delta x_{+1}$ , ID<sub>p+1</sub> is output (~~S4~~) (S24), and if it is not equal to or greater than  $\Delta x_{+1}$ , ID<sub>p</sub> is output intact (~~S5~~) (S25).

Please amend the paragraph beginning at page 29, line 12, as follows:



If the sign of  $d_x$  is not positive in step ~~S4~~ S21, then the angle  $\Delta x_{-1}$  between the camera shooting directions in  $IDp-1$  and  $IDp$  is read out of the storage means 19 using  $IDp-1 \cdot IDp$  as an address (~~S6~~) (S26), then a check is made to determine whether the absolute value of  $d_x$  is equal to or greater than  $\Delta x_{-1}$  (~~S7~~) (S27), and if so,  $IDp-1$  is output (~~S8~~) (S28), and if it is not equal to or greater than  $\Delta x_{-1}$ ,  $IDp$  is output intact (~~S9~~) (S29).

Please amend the paragraph beginning at page 29, line 18, as follows:

Where the angular distance between the shooting directions of adjacent camera devices is small, or where the shooting direction of the camera-equipped portable terminal 3 is suddenly changed a relatively large angle, steps ~~S4~~ S24 and ~~S8~~ S28 are omitted as indicated by the broken lines in Fig. 15; if  $d_x$  is equal to or greater than  $\Delta x_{+1}$  in step ~~S3~~ S23, the angular distance from the shooting direction of the adjoining camera, that is, the angular distance  $\Delta x_{+1}$  between the camera shooting directions in  $IDp+1$  and  $IDp+2$ , is read out from the storage means 19 (~~S10~~) (S30), then a check is made to determine whether  $d_x$  is equal to or greater than  $\Delta x_{+1} + \Delta x_{+2}$  (~~S11~~) (S31), and if so,  $IDp+2$  is output (~~S12~~) (S32), and if it is not equal to or greater than  $\Delta x_{+1} + \Delta x_{+2}$ ,  $IDp+1$  is output (~~S13~~) (S33).

Please amend the paragraph beginning at page 30, line 1, as follows:

When  $|d_x|$  is equal to or greater than  $\Delta x_{-1}$  in step ~~S7~~ S27, the angular distance from the shooting direction of the adjoining camera, that is, the angular distance  $\Delta x_{-2}$  is read out of the storage means 19 using  $IDp-2 \cdot IDp-1$  (~~S14~~) (S34), and a check is made determine whether  $|d_x|$  is equal to or greater than  $\Delta x_{-1} + \Delta x_{-2}$  (~~S15~~) (S35), and if so,  $IDp-2$  is output (~~S16~~) (S36), and if not so,  $IDp-1$  is output (~~S17~~) (S37). Similarly, the angular distances from camera shooting directions of further distant cameras can be decided.

Please amend the paragraph beginning at page 30, line 8, as follows:

Where the angular distances between the shooting directions of adjacent cameras are all equal as in the Fig. 10 example, only the number of pixels  $\Delta x$  corresponding to that angle, 45 degrees in this example, is stored in the camera direction storage means 19 as indicated by the broken lines, and steps ~~S2 and S6~~ S22 and S26 are omitted; in step ~~S3~~ a check is made to determine if  $\Delta x \leq d_x$ , and in step ~~S7~~ S27 a check is made to determine if  $\Delta x \leq |d_x|$ . For large-angle camera operation, steps ~~S4, S8, S10 and S14~~ S24, S28, S30 and S34 in Fig. 15 are omitted as indicated by the broken lines, then in step ~~S11~~ S31 a check is made to see if  $2\Delta x \leq d_x$ , and in step ~~S15~~ S35 a check is made to see if  $2\Delta x \leq |d_x|$ . In this instance, too, the angular distances from camera shooting directions of further distant cameras can similarly be decided.

Please amend the paragraph beginning at page 30, line 19, as follows:

Turning back to Fig. 14, the capturing signal generating means 13 will be described below. As for the input pieces of information  $d_y$  and  $a$ ,  $d_y$  is added with the previous information  $y$  in the adding part 13c and  $a$  is multiplied by the previous information  $a_p$  in the multiplying part 13d as described previously with respect to ~~Fig. 13~~ Fig. 5. The outputs from the respective parts 13b, 13c and 13d are provided to the signal sending means 14, while at the same time the contents of the previous signal memory 13a are updated in the same manner as described previously. For the respective inputs, the discarding parts 13e, 13f and 13g may be provided. In this instance, when  $d_x$  is equal to or smaller than a preset value in the discarding part 13e, the present value  $ID_p$  ( $ID_p$  in the memory 13a) is output without the processing in the camera identifying part 13b.

Please amend the paragraph beginning at page 31, line 4, as follows:

In the camera direction storage means 19 there may be prestored the angles of shooting directions of the camera devices with respect to the direction shooting of a predetermined one of them as depicted in Fig. 16, for instance. In the example of Fig. 16, the shooting direction of the camera device of the camera identification information ID4 is used as a standard of reference and the angles of the shooting direction of each of the other seven camera devices with respect to this reference direction is stored as the number of pixels in one frame of the captured image. In this case, in the processing shown in Fig. 15, the angles in ID<sub>p</sub> and ID<sub>p+1</sub> are read out, for example, in step [[S2]] S22 and it is decided whether  $d_x$  is equal to or greater than the difference between the two angles.

Please amend the paragraph beginning at page 31, line 15, as follows:

According to the usage pattern, when the direction of the partial object that the user wants to see first is predetermined, it is necessary that the respective pieces of camera identification information be made to correspond to north, south, east and west directions, for example, north, north-east, east, ... directions. The correspondences between the camera identification information and the north, south, east and west directions may be defined by predetermining the shooting direction of the camera device of each camera identification information and placing the remote image sensing device 2 accordingly. In some case, however, such placement of the remote image sensing device 1 is time-consuming. To avoid this, as shown in Fig. 11, camera information measuring means 25 is provided in each of the camera devices 2<sub>1</sub> to 2<sub>N</sub>, and the angle of the shooting direction with respect to true north is measured by a magnetic compass or similar direction sensor 25a of the camera information measuring means 25 to obtain the information about the shooting direction of each camera

device in north, south, east, or west direction. In the illustrated example, a tilt angle sensor 25b as by a gravitational accelerometer is also provided, by which is detected a value  $\Delta y$  that represents, in terms of the number of pixels on the frame of the captured image, the angle of the shooting direction to the horizontal plane, that is, the angle (angle of elevation/depression) of the y-axis of the image sensor device 7 of the camera 21. The north, south, east or west direction and the tilt angle  $\Delta y_n$  measured by the camera information measuring means 25 are sent, together with the camera identification information ID<sub>n</sub> of the camera device 2<sub>n</sub> ( $n = 1, \dots, N$ ), to the image capturing device 1 by the signal sending/receiving means 23 as indicated by the term in parentheses in Figs. 11 and 13. The image capturing device 1 receives from each camera device 2<sub>n</sub> its identification information ID<sub>n</sub>, north, south, east or west direction and tilt angle  $\Delta y_n$  by the signal sending/receiving means ~~[[15]]~~ 14, and stores them in the camera direction storage means 19 in correspondence to the identification ID<sub>n</sub> as shown in Fig. 16, for instance.

Please amend the paragraph beginning at page 32, line 18, as follows:

When the user makes a starting access to the image capturing device 1, the image capturing device 1 reads out the identification information of the camera, ID<sub>3</sub> in the Fig. 16 example, whose shooting direction is a predetermined one of the north, south, east and west directions, for example, north direction—ID<sub>3</sub> in the Fig. 16 example—and the elevation/depression angle  $\Delta y_3$ , and sends these read-out values to the remote image sensing device 2, if necessary, together with the initial value  $a_p$  of the zoom in/out parameter (zoom value). The initial value  $a_p$  may be prestored in the storage part 24a of the image extracting means 24 in each of the camera devices 2<sub>1</sub> to 2<sub>N</sub>. The elevation/depression angle  $\Delta y_n$  is subtracted from the output from the adding part 13c in a correcting part ~~[[h]]~~ 13h in Fig. 12

Fig. 14, and is fed to the signal sending means 14. The updating of  $y$  in the previous signal memory  $[[13]]$  13a is performed using the value yet to be corrected in the correcting part 13h. For example, where the user wants to see a partial-object image with reference to the horizontal direction, if the camera shooting direction is a little upward with respect to a horizontal plane, the partial-object image formed on the image sensor device 7 of the camera 21 is shifted upwards from a partial-object image in the horizontal direction by a value corresponding to the upward shooting direction, that is, by  $\Delta y_n$ . Hence the subtraction of  $\Delta y_n$  in the correcting part 13h provides a partial-object image with reference to the horizontal direction. Incidentally, the initial value of  $y$  is set at  $y = 0$ .

Please amend the paragraph beginning at page 37, line 3, as follows:

Upon sending a starting access from the image capturing device 1 to the remote image sensing device 2, the remote image sensing device 2 sends to the image capturing device 1 a partial-object video signal obtained by shooting in a preset reference direction and with a reference zoom amount. In the remote image sensing device 2 camera information measuring means 25 is ~~provided~~ provided, and in the case where the image capturing device 1 responds to a starting access to obtain a partial-video signal in a predetermined direction, for example, in the north direction and in the horizontal direction, an initial signal generating part 13<sub>k</sub> generates initial capturing signals. That is, the azimuth angle  $\theta_i$  and elevation/depression angle  $\phi_i$  measured by the camera information measuring means 25 of the remote image sensing device 2 are stored in storage parts 13<sub>m</sub> and 13<sub>n</sub>, respectively, and direction-containing angle signals of differences between the stored angles  $\theta_i$ ,  $\phi_i$  and predetermined reference azimuth angle and reference elevation/depression angle are calculated in reference calculating parts 13p and 13q, and these signals are sent as initial capturing signals to the

remote image sensing device 2. That is, the difference between the current shooting direction of the panhead camera 21 and the reference direction is sent as the capturing signal to the remote image sensing device 2, which responds to the capturing signal to control the panhead camera 21 to change its shooting direction by the above-mentioned difference. As regards the zoom amount  $Z$ , the initial capturing signal is zero in difference. In the case of effecting such control, the capturing signals based on the variation information detected by the variation detecting means 12, which indicate the current conditions of the panhead camera 21, that is, only variations in the shooting direction and in the zoom amount, are also sent to the remote image sensing device 2. Accordingly, as depicted in Fig. 18, for instance, the pieces of variation information  $d_x$ ,  $d_y$  and  $a$  detected by the variation detecting means 12 are directly input to a converting part 13j of the capturing signal generating means 13, and respective converted outputs are sent as generated capturing signals to the remote image sensing device 2. The remote image sensing device 2 controls the azimuth control mechanism 24d, the elevation/depression control mechanism 24f and the zoom amount control mechanism 24h by the variations represented by the received capturing signals corresponding to them, respectively.

Please amend the paragraph beginning at page 39, line 9, as follows:

A description will be given first of the case where the remote image sensing device 2 is similar in configuration to that described previously with respect to Embodiment 2. An example of the functional configuration of the image capturing device 1 in this example is shown in Fig. 21. There is provided: a plurality  $S$  of lines for connection with a plurality of camera-equipped portable terminals 3, that is, a plurality of surrounding image receiving means  $11_1$  to  $11_S$ ; receiving buffer memories  $12a_1$  to  $12a_S$ ; a previous frame memory  $12b_S$  having  $S$  areas for storing surrounding image signals each corresponding to one of line

numbers  $s$  ( $s = 1, 2, \dots, S$ ); a flag memory 92 for storing a flag indicating whether the corresponding camera is being operated, in correspondence to each line number  $s$ ; an update instructing part 12d<sub>s</sub> corresponding to each line number  $s$ ; one or more variation detecting parts 12c (only one of which is shown); one or more capturing signal generating means 13 (only one of which is shown); image sensing means 18<sub>s</sub> pairing off with the surrounding image receiving means 11<sub>s</sub> of each line; remote image receiving means 16; one or more image capturing means 17 (only one of which is shown); and control means [[98]] 93. In the previous signal memory 13a there are provided areas where to store the previous capturing signal (currently used) for each line number  $s$ . The control means 93 is provided with a memory having stored therein a program necessary for controlling a microprocessor or CPU (Central Processing Unit) to function as the image capturing device 1, and executes the program to effect a read and a write of each memory and operate the respective parts in a sequential order. The functions of some of the functional blocks in Fig. 21 are performed the control means 93 itself.

Please amend the paragraph beginning at page 40, line 7, as follows:

A description will be given below of the case where a certain camera-equipped portable terminal 3 uses a line  $s$  until completion of reception of a partial-object image signal after connecting to the surrounding image receiving means 11<sub>s</sub> of the line number  $s$  to make a starting. Upon the starting access being made to the surrounding image receiving means 11<sub>s</sub>, the capturing signals are read out of that area in the previous signal memory 13a corresponding to the line  $s$ , and the read-out capturing signals are used to extract, by the image extracting means 17, a partial-object video signal from a panorama video signal received by the remote image receiving means 17, and the extracted partial-object video signal is sent to the camera-equipped portable terminal 3 by the image sending means [[s]]

18s of the line number s. In its initial state the previous signal memory 13a has stored in its all areas capturing signal,  $x_0$ ,  $y_0$  and  $a_{p0}$  in this example, for predetermined partial objects. In the camera-equipped portable terminal 3, upon receiving the video signal from the image capturing device 1, the received video signal is played back and displayed by the image display means 32. The operation for capturing the partial-object video signal in the image capturing means 17 is carried out in the same manner as described previously in respect of Embodiment 2.

Please amend the paragraph beginning at page 43, line 18, as follows:

Where the remote image sensing device 1 used is the same as that shown in Fig. 10, too, a plurality of users can use one remote image sensing device 1 at the same time. That is, in the configuration depicted in Fig. 21 the remote image receiving means 16, the capturing signal generating means 13 and the image capturing means 17 are configured as shown in Figs. 14 and 17; further, to perform simultaneous processing for the plurality of camera-equipped portable terminals  $3_m$ , the image capturing device 1 has, as shown in Fig. 21, the plurality of surrounding image receiving means  $11_s$ , the plurality of ~~frame~~ buffer memories  $12a_s$ , the plurality of update instructing parts  $12d_s$ , the previous frame memory 12b having a plurality of storage areas, the previous signal memory 13a having a plurality of storage areas, the plurality of image sending means  $18_s$ , the flag memory 92, and the control means 93. And, as noted in the parentheses in the previous signal memory 13a, the camera identification IDp is used in place of the signal x in the capturing signal, and processing for each camera-equipped portable terminal  $3_m$  is performed in the same manner as in the case of using the omnidirectional camera, but the partial-object video signal capturing operation is carried out as described previously with reference to Embodiment 4. In this case, too, it can easily be understood that the plurality of users can see simultaneously on the plurality of camera-



equipped portable terminals  $3_m$  their desired partial-object images of the video signals in plural directions that are simultaneously received from the plurality of camera devices  $2_1$  to  $2_N$ .

Please amend the paragraph beginning at page 44, line 13, as follows:

The systems of Embodiments 1 and 3 can also be adapted to simultaneously capture partial-objects images by the plurality of camera-equipped portable terminals  $3_m$ . In this instance, the image capturing means 17 in Fig. 21 is omitted, and the capturing signal for the camera-equipped portable terminal  $3_m$ , generated in the image capturing device 1, is attached with, for example, the processing number  $s$  for identification use, and sent to the remote image sensing device 2; in the remote image sensing device 1, in the case of the Fig. 4 example, a storage parts 24a 24a' for storing capturing signals for respective processing numbers are each provided in the image extracting means 24 as indicated by the broken line in Fig. 20, then the capturing signals in the storage parts 24a corresponding to the received processing numbers are updated, then partial-object video signals are extracted based on the capturing signals stored in the respective storage parts 24a 24a' as described previously with reference to Embodiment 1, and the extracted partial-object video signals, attached with the processing numbers, are sent to the image capturing device 1. In the image capturing device 1 the partial-object video signals simultaneously received by the camera-equipped portable terminals  $3_m$ , corresponding to the received processing numbers, are relayed and sent; the image capturing means 17 is omitted.

Please amend the paragraph beginning at page 45, line 6, as follows:

In the case of the system shown in Fig. 11, as is the case with the above, the storage part 24a for storing the capturing signal for each processing number is provided in the image

extracting means 24 of the remote image sensing device  $[[1]]$  2; the capturing signal in the storage part 24a, corresponding to the received processing number, is updated with the capturing signal received simultaneously with the processing number, then based on each capturing signals  $ID_p$ ,  $x$ ,  $a_p$  stored in the storage part 24a, the partial-object video signal is captured from the corresponding camera device  $2_n$ , and the captured vide signal is sent to the image capturing device 1, together with the processing number.

Please amend the paragraph beginning at page 49, line 11, as follows:

The image capturing device 1 used in each of Embodiments 1 to 6 can be implemented by a computer. That is, the program for executing the functions of each image capturing device 1 is installed on the computer from a recording medium such as a CD-ROM (Compact Disk Read Only Memory), magnetic disk, and a semiconductor memory, or downloaded to the computer via a communication line for execution by the computer.